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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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04/02/2001

Minoru Myojo

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7590

01/16/2003

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EXAMINER

MACCHIAROLO, PETER J

ART UNIT

PAPER NUMBER

2875

DATE MAILED: 01/16/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/762,367

Applicant(s)

MYOJO ET AL.

Examiner

Peter J Macchiarolo

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-- The MAILING DATE of this communication appears on the cover sheet with the corresponding address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on 23 December 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6, 19, 23-25 and 27-30 is/are rejected.
- 7) ☒ Claim(s) 7-18, 20-22, and 31-33 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Response to Amendment***

1. The reply filed on December 23, 2002 consists of amendments to the independent claim, and further, the reply consists of remarks related to the prior rejection of claims in the First Office Action. However, claims 1-33 are not allowable as explained below.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 1-6, 19, 23-25, and 27-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ward (USPN 4,205,258, hereinafter "Ward").

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In regards to claim 1, Ward discloses in figures 1-2, a bulb provided with a pair of electrode coils (16a, 16b) at both ends thereof, wherein a means for preventing destructive power arcs (e.g. overheating, 34) connects the lead wires (32a, 32b) electrically just after the electrode coil is disconnected and the means for preventing overheating melts at the end of a life of the lamp and retains it molten state (see column 2 lines 37-51). Ward further teaches in column 1 lines 19-21, that this configuration extinguishes destructive power arcs and safely ends the life of the lamp.

Ward is silent to each of the electrode coils mounted between two lead wires held by a bulb-end glass, and that the lamp is a fluorescent lamp.

However, a fluorescent lamp with the electrode coils mounted between two lead wires held by a bulb-end glass is well known and practiced in the art. Further, it is well known that there exists a large demand for increasingly safe fluorescent lamps of this type.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to construct a fluorescent lamp with the recited limitations of claim 1. Ward teaches Applicant's means for overheating, and this means for overheating is safe way to extinguish power arcs within the envelope. One of ordinary skill in the art would be motivated to apply Ward's means for overheating to a well-known fluorescent lamp with the electrode coils mounted between two lead wires held by a bulb-end glass, such as Applicant's, since this configuration will make the lamp more safe.

In regards to claims 2-6 Ward teaches all of the recited limitations of claim 1 (above).

Ward further teaches in figures 1 and 2 that the means for preventing overheating includes a glass member (44) and a first and second metallic pin (32b and 36) for supporting the glass member, and one end of the first metallic pin (36) is connected to the lead wires, respectively, and the first and second pin are connected not in contact with each other. Ward further teaches in figure 2 that the ends of each of the first and the second metallic pins are space apart via the glass member, and the first metallic pin (36) is wrapped around the glass member, while the other pin (32b) is positioned in the glass. Ward further teaches in column 1 lines 19-21 that this configuration safely extinguishes destructive power arcs.

Ward is silent to one end of the second metallic pin (32b) being connected to the lead wire, and the other end of the first metallic pin (36) being positioned in the glass member.

However, it is well known in the art that positioning pin 36 in the glass member will provide physical stability and improve its resistance to damaging vibrations.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to construct a fluorescent lamp according to claim 1 (above), further comprising the limitations of claims 2-6, including pin 36 being positioned in the glass member, since it is well known in the art that that positioning pin 36 in the glass member will provide physical stability and improve its resistance to damaging vibrations and Ward teaches this configuration will safely extinguishes destructive power arcs.

In regards to claim 19, Ward discloses all of the recited limitations of claim 2 (above). Ward further teaches in column 3 lines 2-16 that a layer of barium flashed during gettering may be adhered to the surface of the outer glass member to prevent an electrical short of the arc tube.

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Ward further teaches column 1 lines 19-21 that this configuration will safely extinguish destructive power arcs.

Ward is silent to the layer of barium being heat resistant.

However, one of ordinary skill in the art will recognize that this layer of barium will resist a small amount of heat.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to construct a fluorescent lamp according to claim 2 (above), further including a layer of non-conductive inorganic heat resistant material, since it is well known in the art that this layer of barium will resist a small amount of heat. Further, one would be motivated to do so since Ward further teaches that this configuration will safely extinguish destructive power arcs.

In regards to claim 23, Ward teaches all of the recited limitations of claim 2 (above). Ward further teaches in column 3 lines 2-16 that a layer of barium flashed during gettering may be adhered to the surface of the outer glass member to prevent an electrical short of the arc tube. Ward further teaches column 1 lines 19-21 that this configuration will safely extinguish destructive power arcs.

Ward is silent to the layer of barium being deposited on the surface of the metallic pin, or that barium has a lower work function than the pin.

However, one of ordinary skill in the art will recognize that the process of depositing barium on the surface of the glass member will spill onto the metal pin, and the lamp will still safely extinguish destructive power arcs. Further, one of ordinary skill will recognize that the

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barium layer must have a lower work function than the pin in order for the lamp to operate correctly.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to construct a fluorescent lamp according to claim 2 (above), further with a substance having a lower work function attached to a surface of the metallic pin, since one of ordinary skill in the art will recognize that the process of depositing barium on the surface of the glass member will spill onto the metal pin, and further, one of ordinary skill will recognize that the barium layer must have a lower work function than the pin in order for the lamp to operate correctly, and Ward teaches that this configuration will safely extinguish destructive power arcs.

In regards to claims 24, 25, and 27, Ward teaches all of the recited limitations of claim 1 (above). Ward further teaches in figure 2, the means for preventing overheating includes a glass member (44) mounted between the lead wires (32a 32b) and a the first metallic pin 36 will prevent the glass member from falling from the lead wires during melting. Ward further teaches that the means for preventing falling (36) is provided on a circumference of the glass member and this configuration will safely extinguish destructive power arcs.

Ward is silent to the electrical volume resistance of the glass member being lower than that of the bulb-end glass.

However, it is well known in the art that a lower electrical volume resistance is equivalent to a lower melting temperature, and it is further well known that for this configuration

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to work in a fluorescent lamp, the glass member, which is intended to melt, should not have a higher melting temperature than the bulb-end glass.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to construct a fluorescent lamp according to claim 1 (above), further wherein the means for preventing overheating includes a glass member having an electrical volume resistance lower than that of the bulb-end glass, since it is well known that for this configuration to work in a fluorescent lamp, the glass member, which is intended to melt, should not have a higher melting temperature than the bulb-end glass.

In regards to claims 28-30, Ward teaches all of the recited limitations of claim 1 (above).

Ward further teaches in figure 2, the means for preventing overheating includes a glass member (44) and an electrical conduction between the lead wires through the glass member (44) and an electrical conduction between the lead wires through the glass member is continued just before the electrode coils are disconnected. Ward further teaches in column 3 lines 2-16 that a layer of barium flashed during gettering may be adhered to the surface of the outer glass member to prevent an electrical short of the arc tube. Ward further teaches column 1 lines 19-21 that this configuration will safely extinguish destructive power arcs.

Ward is silent to the layer of barium being heat resistant and deposited on the surface of the bulb-end glass, and the means for preventing overheating is located closer to the electrode coil than to the bulb end glass.

However, one of ordinary skill in the art will recognize that this layer of barium will resist a small amount of heat, and it is well known that this configuration will best perform if the



means for preventing overheating is located closer to the electrode coil than to the bulb end glass which is coated with a heat resistant layer in a fluorescent lamp.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to construct a fluorescent lamp according to claim 1 (above), further with the recited limitations of claims 28-30 above, including a layer of barium being heat resistant and deposited on the surface of the bulb-end glass, and the means for preventing overheating is located closer to the electrode coil than to the bulb end glass, since one of ordinary skill in the art will recognize that this layer of barium will resist a small amount of heat, and it is well known that this configuration will best perform if the means for preventing overheating is located closer to the electrode coil than to the bulb end glass which is coated with a heat resistant layer in a fluorescent lamp.

#### ***Response to Arguments***

4. Applicant's arguments filed December 23, 2002 have been fully considered. The Examiner appreciates Applicant's comments, however, additional prior art in the form of Ward USPN 4,205,258) has been applied in order to anticipate Applicant's amended independent Claim 1.

5. In response to applicant's argument that the Shaffer reference (USPN 5,705,887) fails to show the means for preventing overheating connects the lead wires electrically just before or after the electrode coil is disconnected, the Examiner respectfully submits that Shaffer's reference numeral 46 in figure 5 does indeed connect the two lead wires electrically just after the

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electrode coil is disconnected. Shaffer teaches in column 3 lines 59-65, that a gap 46 is constructed to be “dimensionally small, so long as the separation is sufficient to prevent an electrical discharge or a current to flow through the deposits during all stages of lamp processing. Typically, the length of gap 46 is on the order of at least one millimeter.” The gap 46 has a breakdown voltage low enough so that a small arc will occur between the two portions 42 and 44 if the coil is 10 is broken. Hence, the lead wires will be connected electrically after the electrode coil is disconnected.

6. In response to applicant's argument that the Shaffer reference (USPN 5,705,887) fails to show the means for preventing overheating melts at the end of a life of the fluorescent lamp and retains its molten state, the Examiner respectfully submits that this limitation is a further limiting factor appearing in the amended claims and is hereby rejected with the new prior art of Ward (USPN 4,205,258), necessitated by amendment. See 35 U.S.C. 103(a) above.

### ***Conclusion***

7. Claims 7-18, 20-22, and 31-33 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. The best prior art of record fails to motivate or disclose a fluorescent lamp according to claims 7 and 31-32, especially wherein the glass member has a depression formed on a circumferential surface thereof.

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9. Further, best prior art of record fails to motivate or disclose a fluorescent lamp according to claim 8, 10, and 33 especially wherein a metallic band is wound around the glass member.

10. Further, best prior art of record fails to motivate or disclose a fluorescent lamp according to claim 12, especially wherein the first and the second metallic pin has a substantially annular portion.

11. Further, best prior art of record fails to motivate or disclose a fluorescent lamp according to claim 13, especially wherein the means for preventing overheating further includes a metallic container in which the glass member is housed.

12. Further, best prior art of record fails to motivate or disclose a fluorescent lamp according to claims 20-21, especially wherein the first and second metallic pins are inserted into the glass member.

13. Further, best prior art of record fails to motivate or disclose a fluorescent lamp according to claim 22, especially wherein the heat resisting material has a melting point in excess of 200 degrees C or more.

14. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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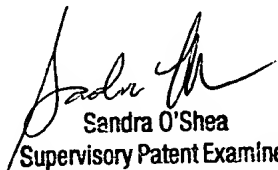
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter J Macchiarolo whose telephone number is (703) 305-7198. The examiner can normally be reached on 7.30 - 4:30, M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandra O'Shea can be reached on (703) 305-4939. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

pjm  
January 10, 2003

  
Sandra O'Shea  
Supervisory Patent Examiner  
Technology Center 2800